



DDMP – RDP – PFP Configuration Tool

Operating Manual:

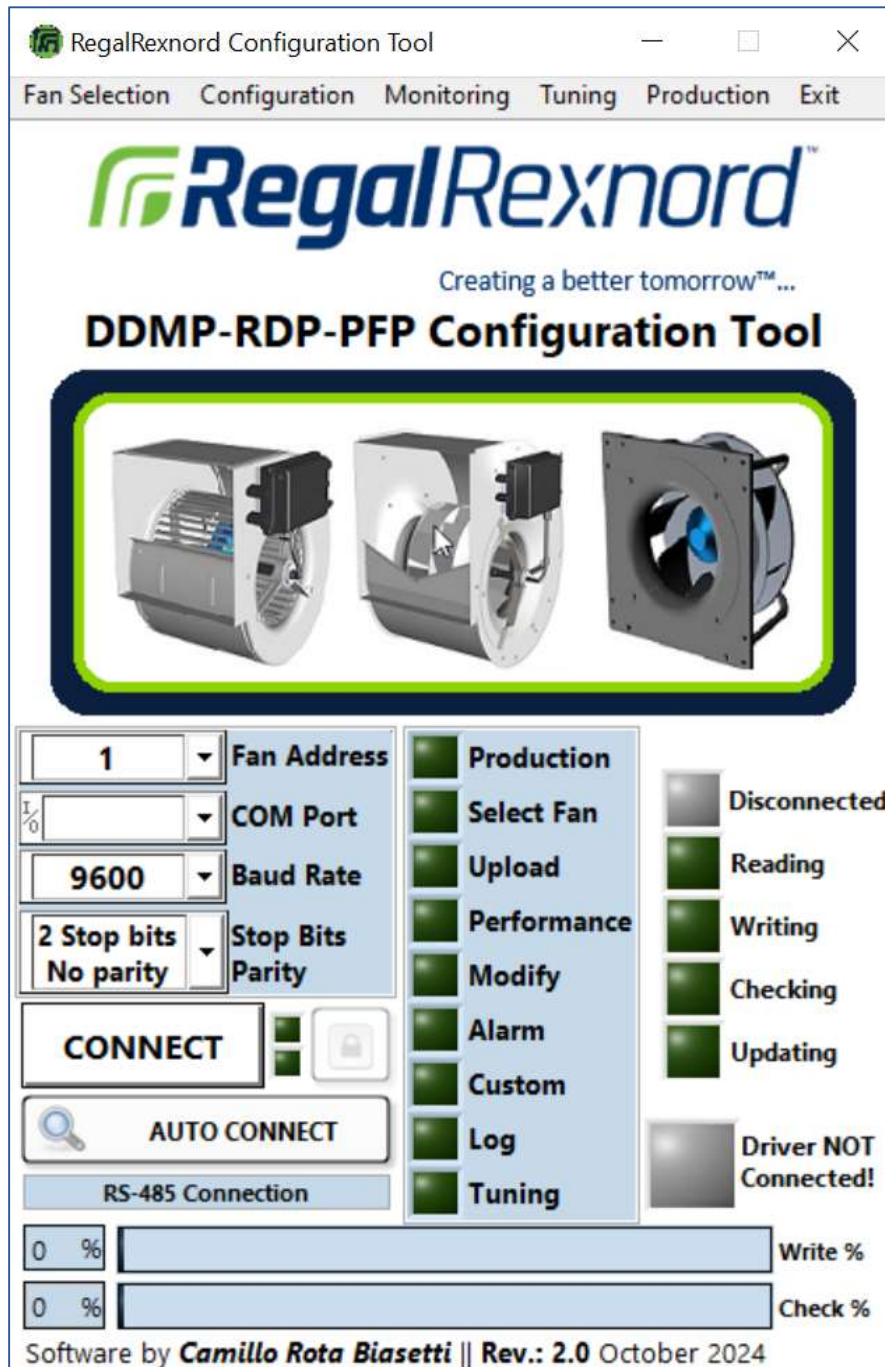


Figure 1: Main window

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1. System requirements:

The RegalRexnord Fan Configurator Rev. 2.0 is a Labview software, and it runs only on a Windows operating system from version 10 onwards with a hard disk available space of 500MB.

If the Labview runtime is already present, the installer will copy only the software requiring just 50MB of hard disk space.

The communication protocol is Modbus RTU and an USB to 485 converter is necessary to connect the software to the fan.

After downloading and decompressing the zip file, double click on the setup.exe file and the program will be installed in the main root of the system

C:\RegalRexnord Fan Configurator\Save

2. Connections:

- Connect the fan to the power supply (230V/1ph – 400V/3ph);
- Connect the Modbus to RS-485 converter cable to the port A, B and ground of the driver:



Figure 2: Cable connections

Note: Please refer to the fan product manual for all the detailed instructions.

- Select the connecting parameters if known:

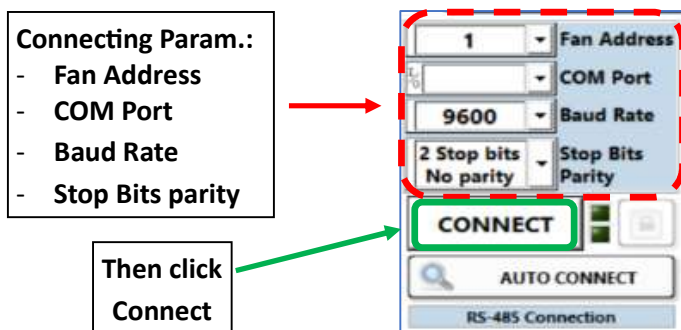


Figure 3: Connecting param. selection

- If connecting parameters are unknown: use the AUTO CONNECT function:



Figure 4: Auto connect

In the **auto-connect** function you could either:

A) Select the COM port if known

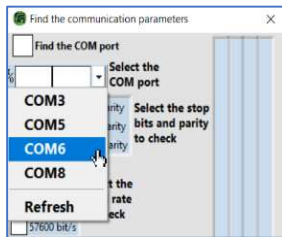


Figure 5: Select the COM port

B) Use the Find the COM port option, then unplug and plug the USB cable:

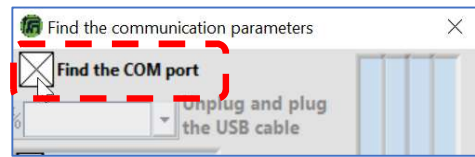
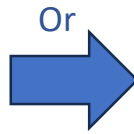


Figure 6: Find the COM port option

Then click on Start:

The system will search throughout the COM Ports, Baud rate, Stop bits, fan address until it establishes the connection.

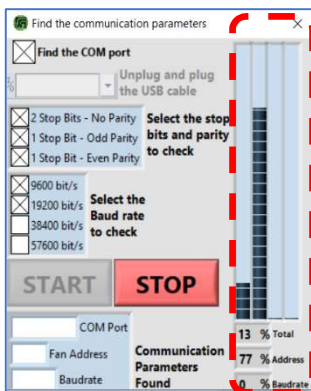
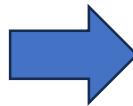


Figure 7: search for connection

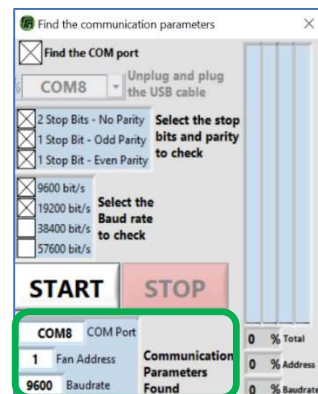


Figure 8: Connecting parameters found

Then, close the Auto connection window (Click on X) to return to the main window:

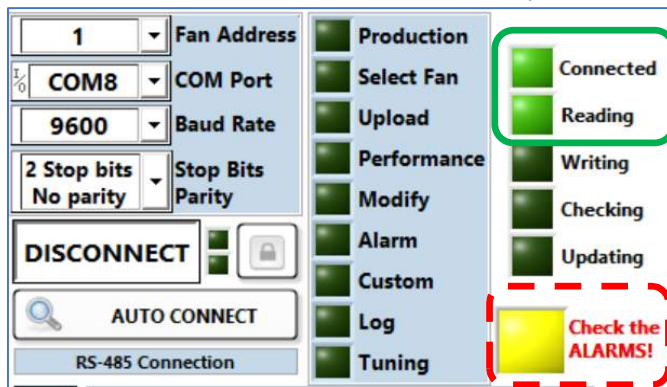


Figure 9: Connection established

Once returned to main screen the Driver is connected automatically

But Alarms still to be checked

Check the reason of the alarm warning. Go to Monitoring -> Alarms:

OK						Alarm Description					
Reg.	Description	DRIVER	USER	Reg.	Description	DRIVER	USER				
	Reset	0		32	AVOID RANGE START	20000		<input checked="" type="checkbox"/>	Memory Error	<input checked="" type="checkbox"/>	Fan Connected
1	MIN SPEED	400		33	AVOID RANGE END	20000		<input checked="" type="checkbox"/>	Short Circuit	<input checked="" type="checkbox"/>	NO Fan Selected
2	MAX SPEED	2000		34	INPUT TYPE	1		<input checked="" type="checkbox"/>	Lost Synchronism	<input checked="" type="checkbox"/>	Standard Mode
3	Acceleration	200		35	STOP SPEED	20000		<input checked="" type="checkbox"/>	Input Voltage Error	<input checked="" type="checkbox"/>	Driver Configured
4	Deceleration	150		36	MAX POWER	1050		<input checked="" type="checkbox"/>	High Bus Voltage	<input checked="" type="checkbox"/>	Mismatch Configuration
5	Pole Couples	4		37	Power Kp	200		<input checked="" type="checkbox"/>	Low Bus Voltage	<input checked="" type="checkbox"/>	Driver OK
6	Blocking Current Level	4		38	Power Ki	50					
7	MAX CURRENT	4500		39	CONSTANT AIRFLOW	0					
8	Stator Resistance	318		40	Kp Flow	20					
9	Synch. Inductance	165		41	Ki Flow	50					
10	P.M. Flux	2068		42	MIN AIRFLOW	500					
11	Current Kp	494		43	MAX AIRFLOW	3000					
12	Current Ki	278		44	FAN MODEL	2					

Figure 10: List of alarms

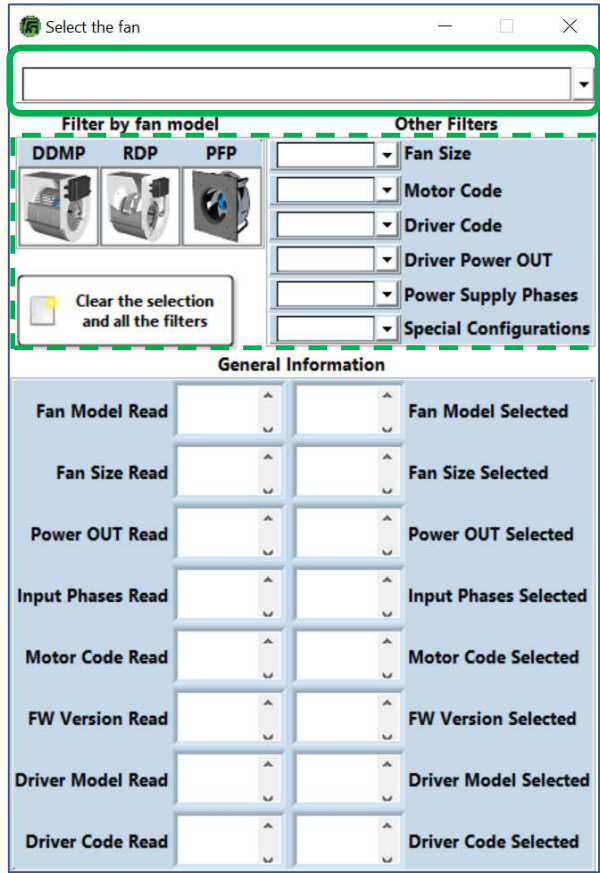
A fan must be selected to remove the alarm

3. Fan selection:

- Read fan nameplate (Model, motor, driver, power)
- Click on “Fan Selection” on top left tab of the main screen:



At this stage **All** the possible fan selections are available among these three models: DDMP – RDP – PFP.



Use the optional filters to speed up fan selection:

Note: Below filters are not mandatory, some of those could be selected and some other could be left blank. However the more filter you use the easiest will be to select the correct fan from the general drop down menu.

Figure 11: Select the fan window

- Filter examples:

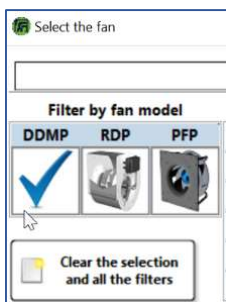


Figure 12: by fan model

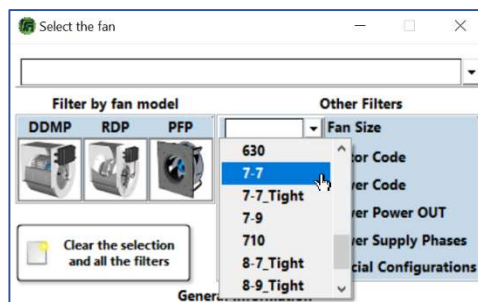


Figure 13: by fan size

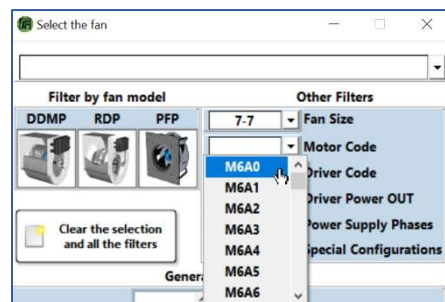


Figure 14: by motor code

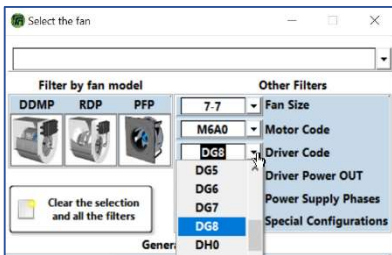


Figure 15: by Driver code

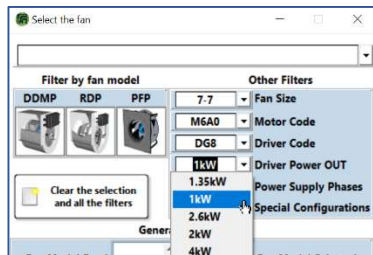


Figure 16: by Driver output Power

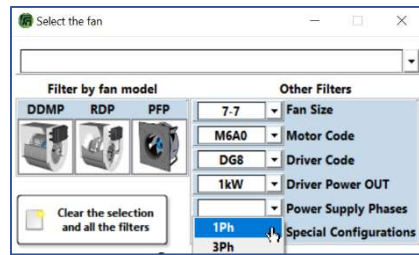


Figure 17: by Power supply phases

- Finally, select the proper fan from the drop-down menu where only filtered fans are selectable:

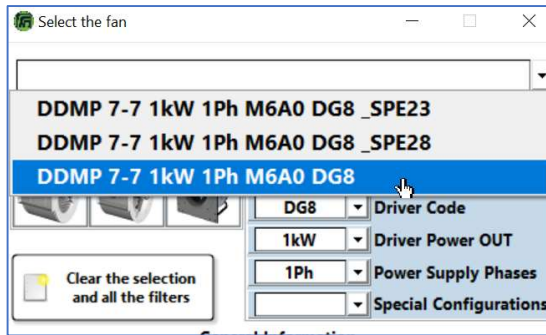


Figure 18: Fan selection from drop-down menu

- Once fan is selected, main window will show “Default OK” (no alarms) and fan selection window will show *matching values in read and selected general info*:

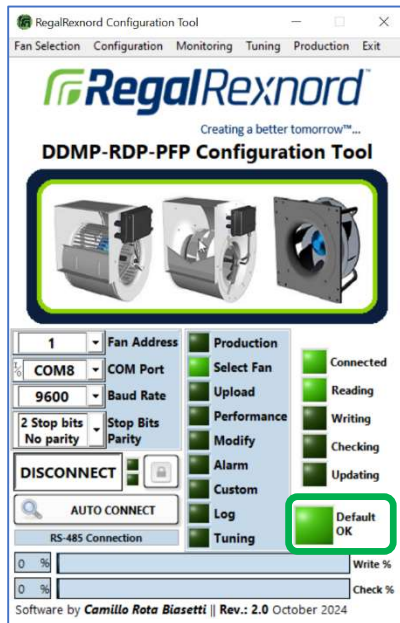


Figure 19: Fan correctly selected

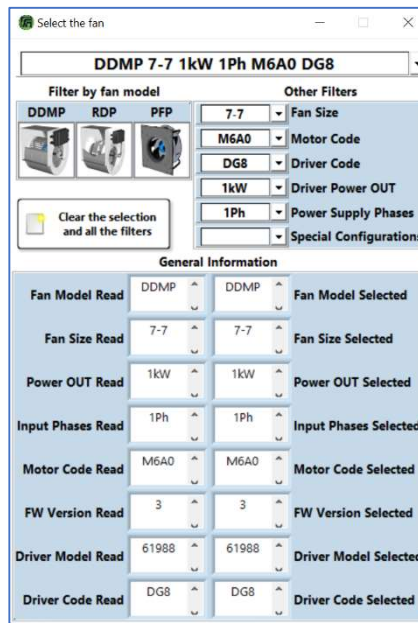


Figure 20: Read and selected values matching

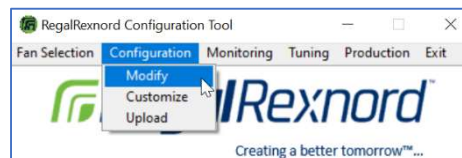
- If any alarm is reported, go to the alarm section to find the mismatching value. For example the configuration selected is mismatching the info read:

Reg.	Description	DRIVER	USER	Reg.	Description	DRIVER	USER
1	MIN SPEED	400	400	33	AVOID RANGE START	20000	20000
2	MAX SPEED	2000	2000	34	INPUT TYPE	1	1
3	Acceleration	200	200	35	STOP SPEED	20000	20000
4	Disconnection	150	150	36	MAX POWER	1050	1050
5	Pole Couplings	4	4	37	Power Kp	200	200
6	Blocking Current Level	4	4	38	Power Ki	50	50
7	MAX CURRENT	4500	4500	39	CONSTANT AIRFLOW	0	0
8	Stator Resistance	318	318	40	Kp-Flow	20	20
9	Synch Inductance	195	195	41	Ki-Flow	50	50
10	P.M. Flux	2068	2068	42	MIN AIRFLOW	900	750
11	Current Kp	494	494	43	MAX AIRFLOW	3000	2750
12	Current Ki	278	278	44	FAN MODEL	2	4
13	Speed Kp	1000	1000	45	MODBUS ADDRESS	1	1
14	Speed Ki	100	100	46	TACHO OUT	0	0
15	Id Ref	800	800	47	MODBUS SPEED	96	96
16	LOW THRESHOLD SPEED	0	0	48	MODBUS STOP BITS	0	0
17	Kp-AP	1000	1000	49	Blocking Speed	150	150
18	Ki-AP	500	500	50	EXTERNAL PID SET	0	0
19	Sampling Frequency	14000	14000	51	VP EXIT PID	0	0
20	Freq. Ratio	1	1	52	Ki EXIT PID	0	0
21	FIXED SPEED SETTING	0	0	53	Kd EXIT PID	0	0
22	Num Fan-poles Trans	15	15	54	PID TIME	0	0
23	Max-err-rem	30	30	55	HIGH THRESHOLD SPEED	0	0
24	Block Alarm Timer	700	700	56	COMM. TIMEOUT	0	0
25	pl-kt	100	100	57	Max Synchronization Falls	15	15
26	pl-kt	3000	3000	58	Limit RPM max	2000	2000
27	pl-kt	15	15	59	Limit OUT	4500	4500
28	Vel-c2	100	100	60	Limit P-MAXI	1050	1050
29	MAX TEMPERATURE	750	750	61	---	0	0
30	ASYNCHRONOUS SLIP	0	0	62	---	0	0
31	PID POS/NBS	0	0	63	---	0	0

Figure 21: Mismatch configuration in alarm section

4. Modify:

- Fan configuration could be modified if needed;
Click on Configuration -> Modify tab on main window:



Here a list of all the parameters free to be modified:

Value	Parameter Name	Value	Parameter Name
0	Reset	20000	AVOID RANGE START
400	MIN SPEED	20000	AVOID RANGE END
2000	MAX SPEED	1	INPUT TYPE
200	Acceleration	20000	STOP SPEED
150	Deceleration	1050	MAX POWER
4	Pole Couples	200	Power Kp
4	Blocking Current Level	50	Power Ki
4500	MAX CURRENT	0	CONSTANT AIRFLOW
318	Stator Resistance	20	Kp Flow
165	Synch. Inductance	50	Ki Flow
2068	P.M. Flux	500	MIN AIRFLOW
494	Current Kp	3000	MAX AIRFLOW
278	Current Ki	2	FAN MODEL
1000	Speed Kp	1	MODBUS ADDRESS
100	Speed Ki	0	TACHO OUT
500	Id Ref	96	MODBUS SPEED
0	LOW THRESHOLD SPEED	0	MODBUS STOP BITS
1000	Kp AF	150	Blocking Speed
500	Ki AF	0	EXTERNAL PID SET
14000	Sampling Frequency	0	KP EXT PID
1	Freq. Ratio	0	KI EXT PID
0	FIXED SPEED SETTING	0	KD EXT PID
15	Num Failures Trans	0	PID TIME
30	Max err rpm	0	HIGH THRESHOLD SPEED
700	Block Alarm Timer	0	COMM. TIMEOUT
100	pI1 k1	15	Max Synchronism Fails
5000	pI1 k2	2000	Limit RPM max
15	pI1 k3	4500	Limit I OUT
100	Vel ct2	1050	Limit P MAX
750	MAX TEMPERATURE		

Note: This list is showing just the unlocked parameters that could be modified. Not all parameters are free to accept a modification due to safety restrictions, please refer to your Regal Rexnord contact application engineer for allowed modifications.

To modify the unlocked parameters, it's enough to double click on the value cell, change the value with the desired one and click enter. This automatically overwrite the driver.

Locked values are disabled and greyed out

Figure 22: Parameters free to be modified

For any modification, all the modified register will be shown in yellow:

Modified value

Reg.	Description	DRIVER	USER	Reg.	Description	DRIVER	USER
0	Reset	0	0	32	AVOID RANGE START	20000	20000
1	MIN SPEED	600	420	33	AVOID RANGE END	20000	20000
2	MAX SPEED	2000	2000	34	INPUT TYPE	1	1
3	Acceleration	200	200	35	STOP SPEED	20000	20000
4	Deceleration	150	150	36	MAX POWER	1050	1050
5	Pole Couples	4	4	37	Power Kp	200	200
6	Blocking Current Level	4	4	38	Power Ki	50	50
7	MAX CURRENT	4500	4500	39	CONSTANT AIRFLOW	0	0
8	Stator Resistance	318	318	40	Kp Flow	20	20
9	Synch. Inductance	165	165	41	Ki Flow	50	50
10	P.M. Flux	2068	2068	42	MIN AIRFLOW	500	500
11	Current Kp	494	494	43	MAX AIRFLOW	3000	3000
12	Current Ki	278	278	44	FAN MODEL	2	2
13	Speed Kp	1000	1000	45	MODBUS ADDRESS	1	1
14	Speed Ki	100	100	46	TACHO OUT	0	0
15	Id Ref	500	500	47	MODBUS SPEED	96	96
16	LOW THRESHOLD SPEED	0	0	48	MODBUS STOP BITS	0	0
17	Kp AF	1000	1000	49	Blocking Speed	150	150
18	Ki AF	500	500	50	EXTERNAL PID SET	0	0
19	Sampling Frequency	14000	14000	51	KP EXT PID	0	0
20	Freq. Ratio	1	1	52	KI EXT PID	0	0
21	FIXED SPEED SETTING	0	0	53	KD EXT PID	0	0
22	Num Failures Trans	15	15	54	PID TIME	0	0
23	Max err rpm	30	30	55	HIGH THRESHOLD SPEED	0	0
24	Block Alarm Timer	700	700	56	COMM. TIMEOUT	0	0
25	pI1 k1	100	100	57	Max Synchronism Fails	15	15
26	pI1 k2	5000	5000	58	Limit RPM max	2000	2000
27	pI1 k3	15	15	59	Limit I OUT	4500	4500
28	Vel ct2	100	100	60	Limit P MAX	1050	1050
29	MAX TEMPERATURE	750	750	61	---	0	0
30	ASYNCHRONOUS SLIP	0	0	62	---	0	0
31	PID POS/NEG	0	0	63	---	0	0

Custom Registers alarm

Figure 23: Alarms monitoring custom register

Please refer to the product manual for the min-max allowed values.

5. Customize:

Click on Configuration tab -> Customize:

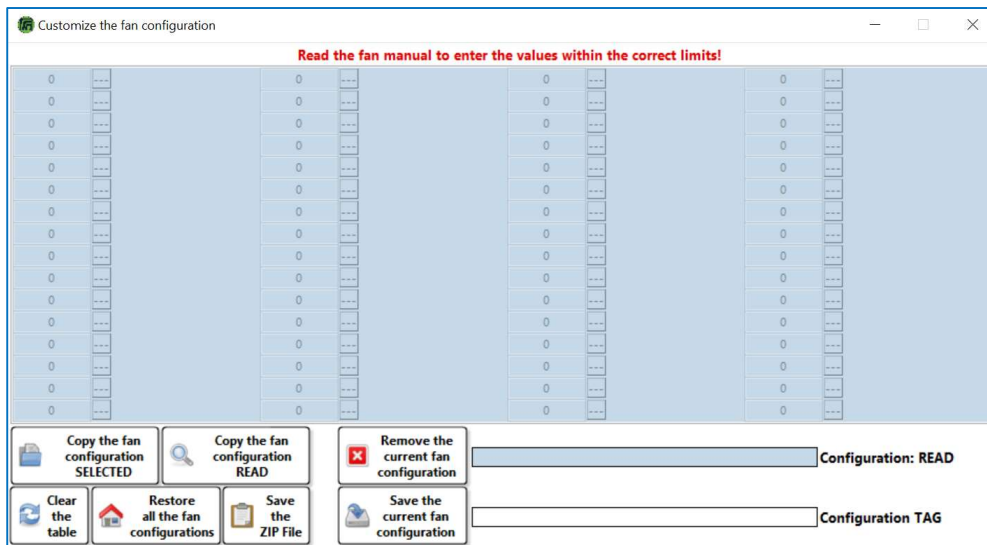
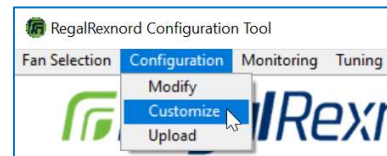


Figure24: Customize empty window

In this section is possible to:

- Copy the fan configuration SELECTED in fan selection;
- Copy the fan configuration READ from driver;
- Modify the unlocked param. and save the current configuration;
- Remove the current configuration.

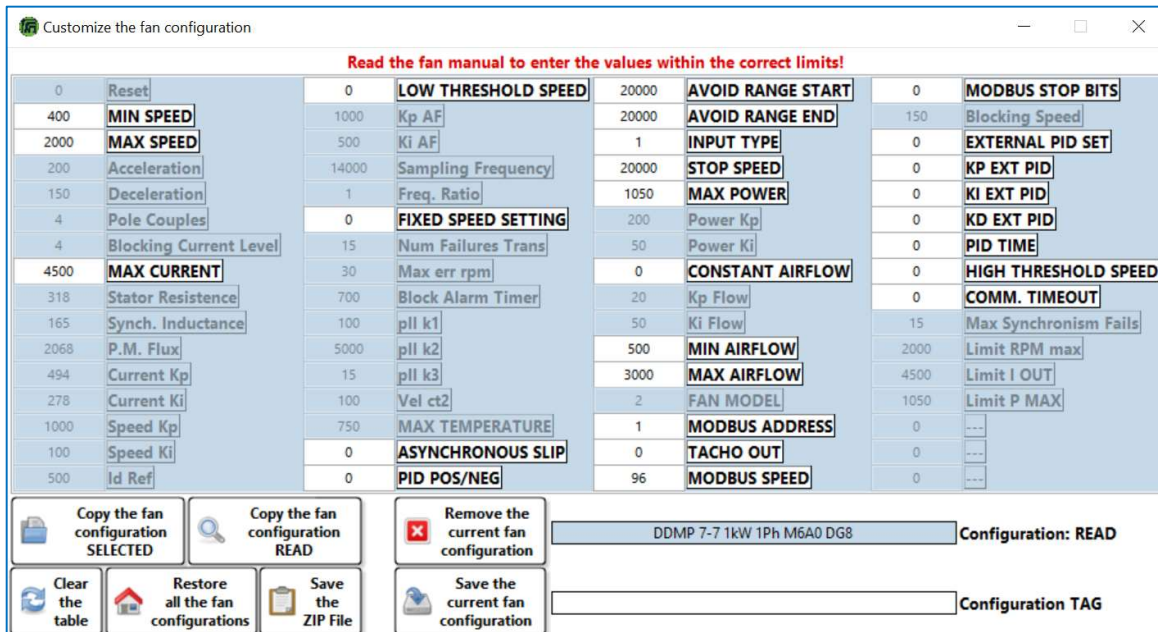


Figure 25: Copy the fan configuration READ

Note: When fan configuration selected and read coincide, i.e. without any modification done, no alarm will be reported in the alarm section.

If instead a modification on the fan parameters is done, this will not be automatically saved on the driver (differently from the Modify section), but the modified configuration has to be saved, choosing a Configuration TAG:

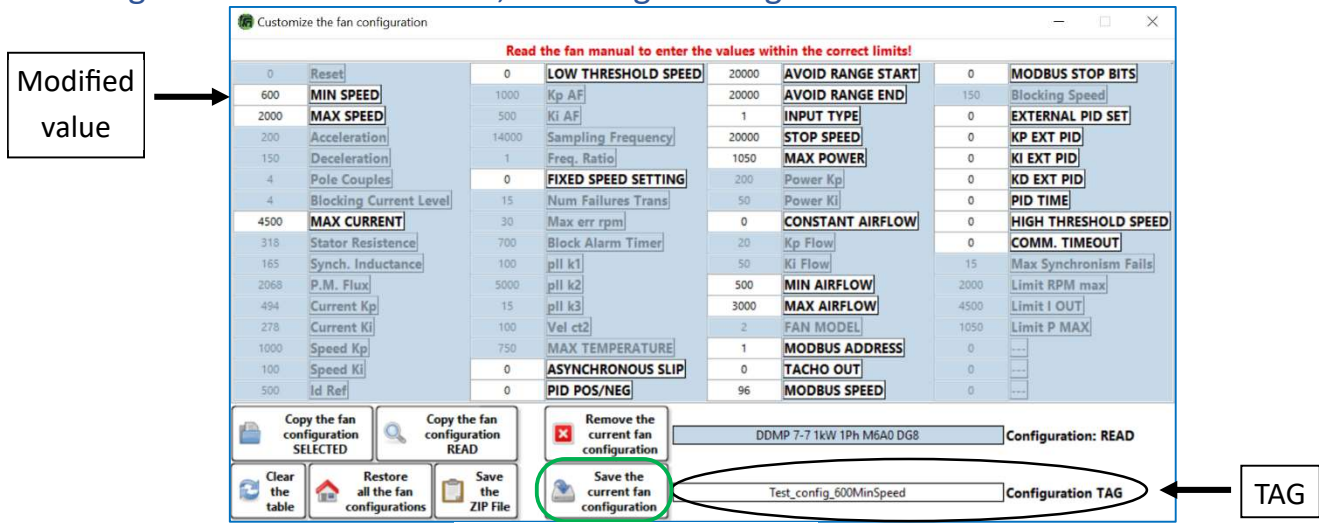


Figure 26: Saving new configuration

Once the configuration is saved, it will be included in the list of configurations available in fan selection. The modification will be reported in custom registers alarm, in yellow.

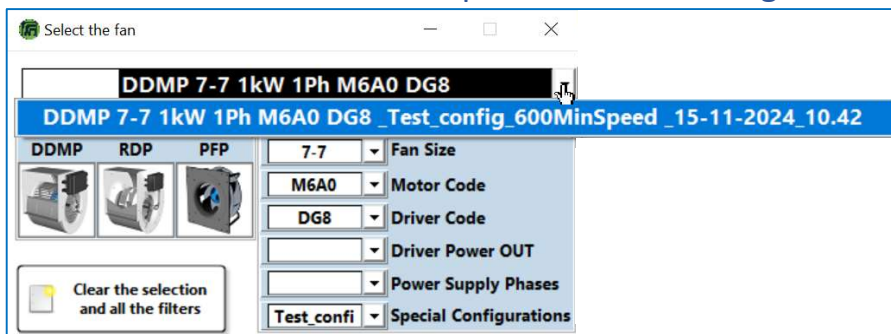


Figure 27: New configuration available in fan selection

Finally, click on copy the fan config. SELECTED to select the new fan configuration:

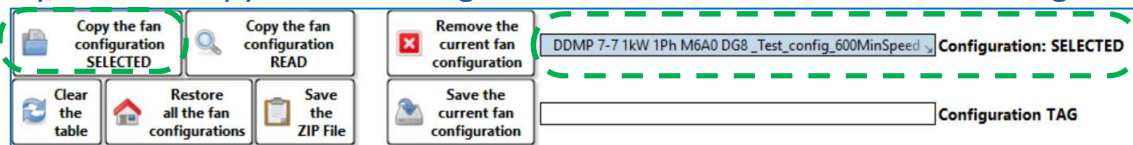
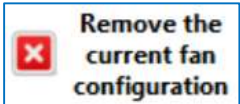
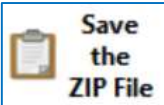
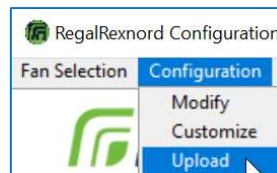


Figure 28: New configuration selected

- To remove the current fan configuration click on the remove button: 
- To save the entire folder containing all available configuration in zip format click on Save the zip file button: 

A zip folder will be saved in C:\RegalRexnord Fan Configurator Rev. 2.0\Backup

6. Upload:



The upload function allows the user to upload an entire configuration over the configuration read from the driver.

Select the configuration from the main dropdown menu in Fan selection then open the upload section:

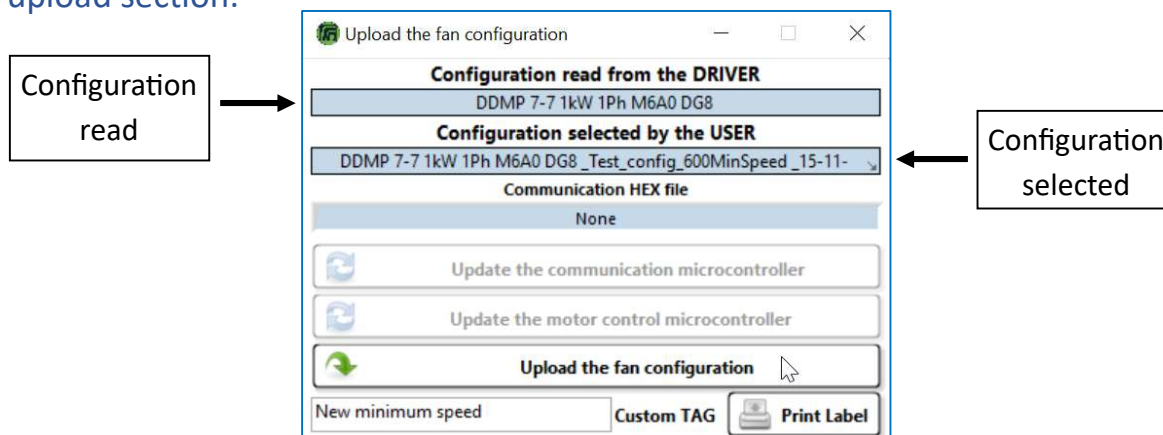


Figure 29: Upload the fan configuration

Click on Print Label button to print out a label reporting the main featured of the uploaded configuration, option to include a custom TAG.

Note: Once the upload is done, there will be No alarms on registers reported.

7. LOG:



The LOG section gives information on fans performances.

It is possible to track the LOG manually, by clicking on ADD Record or automatically with the Auto LOG function by providing a time range in seconds:

Measured Speed [rpm]	Read Speed [rpm]	Motor Current [mA]	Driver Power OUT [W]	Module Temp. [°C]	BUS Voltage [V]	Analog Signal [V]	Transd. Signal [V]	ENABLE Signal [V]	Fan Airflow [m3/h]	Static Pressure [Pa]	Alarm Code 1 [#]	Alarm Code 2 [#]	Switching Frequency [Hz]	Local Time [s]
0,00	0,00	0,00	0,00	27,40	321,00	0,00	0,00	0,00	0,00	0,00	0,00	0,00	14010,00	12.29.15
0,00	0,00	0,00	0,00	27,20	321,90	0,00	0,00	0,00	0,00	0,00	0,00	0,00	14010,00	12.27.02
1019,00	1019,00	397,00	51,00	27,50	379,80	3,90	0,00	10,00	409,18	135,67	0,00	0,00	14010,00	12.26.53
808,00	779,00	150,00	15,00	27,40	379,90	1,90	0,00	10,00	0,00	59,27	0,00	0,00	14010,00	12.26.43
830,00	830,00	289,00	30,00	27,30	379,80	2,90	0,00	10,00	329,92	88,23	0,00	0,00	14010,00	12.26.33
830,00	830,00	289,00	30,00	27,30	379,90	2,90	0,00	10,00	329,92	88,23	0,00	0,00	14010,00	12.26.23
830,00	830,00	291,00	31,00	27,20	379,80	2,90	0,00	10,00	335,64	88,40	0,00	0,00	14010,00	12.26.14
830,00	830,00	287,00	30,00	27,10	379,80	2,90	0,00	10,00	324,18	88,06	0,00	0,00	14010,00	12.25.58

Figure 30: acquire the LOG

Click on Save INFO or Save LOG to save them in text format, in this location:

C:\RegalRexnord Fan Configurator Rev. 2.0\Save

8. Performance:

- Monitoring -> Performance tab on main window:
Here all fan performances displayed:

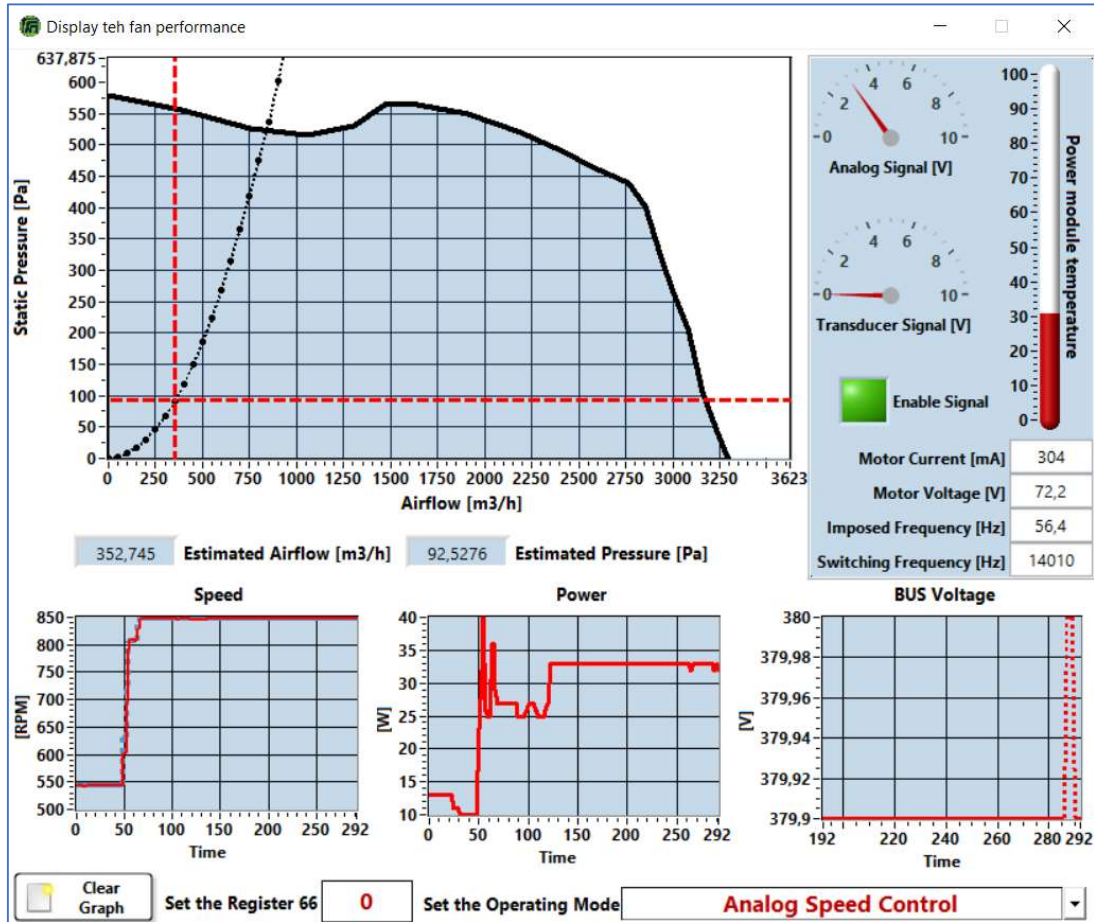
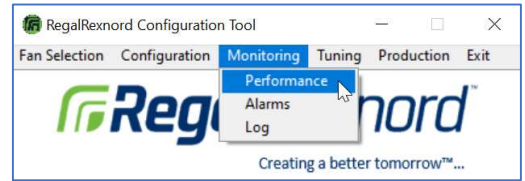
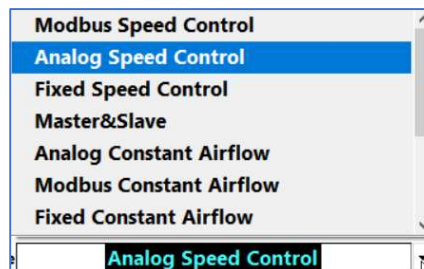


Figure 31: Fan performances

Note: the above fan performances are obtained in analog speed control. Flow rate in m3/h and static pressure in Pa are estimated values. There are no modbus registres with these values.

Here is a list of possible control mode:



Please refer to the product manual for the control modes.